

CLAIMS

1. A process for enhancing the melt strength of polypropylene comprising the steps of:
 - mixing the polypropylene with at least 0.1-8 wt.% of an oligomer of maleimide or a derivative thereof, based on the amount of polypropylene, completely or substantially in the absence of peroxide;
 - reacting said polypropylene and oligomer of maleimide or a derivative thereof at a temperature between 150° C and 300° C.
2. The process according to claim 1 wherein the oligomer of maleimide or a derivative thereof is prepared *in situ* by mixing the polypropylene with maleimide monomer or a derivative thereof and a base.
3. The process according to claim 1 wherein the maleimide derivative oligomer is derived from biscitraconic acid.
4. The process according to claim 2 wherein the maleimide derivative is derived from biscitraconic acid and the base is 1,4-diazabicyclo[2.2.2]octane.
5. A composition, which is completely or substantially free from peroxide, comprising polypropylene and based on the amount of polypropylene, 0.1-8 wt.% of an oligomer of maleimide or a derivative thereof, or a mixture of 0.1-8 wt.% of a monomer of maleimide or a derivative thereof and a base.
6. The composition of claim 5 wherein the maleimide derivative is derived from biscitraconic acid and the base is selected from 1,4-diazabicyclo[2.2.2]octane, 3-qunuclidinol, 1,8-diazabicyclo[5.4.0]undecene, 4-(dimethylamino)pyridine, 2-ethyl-4-methylimidazole, and mixtures thereof.

7. A completely or substantially peroxide free polypropylene obtainable from the composition of claim 5 or 6 with enhanced melt strength, which is at least 1.5 times higher than the melt strength of the corresponding non-modified polypropylene.

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8. Use of the composition of claim 5 or 6 or of the polypropylene of claim 7 for making a foam, fiber, or sheet.

AMENDED CLAIMS

[received by the International Bureau on 29 December 2004 (29.12.04);
original claims 1-8 amended (1 page)]

CLAIMS

1. A process for enhancing the melt strength of polypropylene comprising the steps of:

-mixing 100 parts per weight (ppw) of the polypropylene with at least 0.1-8 ppw of an oligomer of maleimide or an oligomer of a maleimide derivative, in the absence of peroxide or in the presence of less than 0.01 ppw of peroxide;

5 -reacting said polypropylene and oligomer of maleimide or oligomer of a maleimide derivative at a temperature between 150° C and 300° C.

2. The process according to claim 1 wherein the oligomer of maleimide or the oligomer of a maleimide derivative is prepared *in situ* by mixing the polypropylene with maleimide monomer or a derivative thereof and a base.

10 3. The process according to claim 1 wherein the oligomer of a maleimide derivative is derived from biscitraconic acid.

4. The process according to claim 2 wherein the maleimide derivative is derived from biscitraconic acid and the base is 1,4-diazabicyclo[2.2.2]octane.

15 5. A composition, which is free from peroxide or contains less than 0.01 ppw of peroxide, comprising 100 ppw of polypropylene and 0.1-8 ppw of an oligomer of maleimide or an oligomer of a maleimide derivative, or a mixture of 0.1-8 ppw of a monomer of maleimide or a derivative thereof and a base.

6. The composition of claim 5 wherein the maleimide derivative is derived from 20 biscitraconic acid and the base is 1,4-diazabicyclo[2.2.2]octane.

7. A polypropylene which is free from peroxide or contains less than 0.01 ppw of peroxide, obtainable from the composition of claim 5 or 6 with enhanced melt strength, which is at least 1.5 times higher than the melt strength of the corresponding non-modified polypropylene.

25 8. Use of the composition of claim 5 or 6 or of the polypropylene of claim 7 for making a foam, fiber, or sheet.